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The listing of claims will replace all prior versions, and listings, of claims in the

application:

Listing of Claims:

1. (currently amended) A chemical processing apparatus comprising:

a pressure vessel; and a microreactor disposed within the pressure vessel, the pressure

vessel constructed and arranged to maintain the pressure vessel and the microreactor at

elevated pressure when a chemical operation is performed within the apparatus, the

microreactor comprising a material selected from the group consisting of nonmetallic

elements of groups III, IV and V of the Periodic Table, ceramics, glasses, glass

ceramics, polymers, composite materials, silicon and metals, wherein the apparatus

further comprises a heat conductive medium supporting the microreactor within the

pressure vessel and communicating with the microreactor arranged and positioned so as

to be capable of providing thermal exchange between the microreactor and the pressure

vessel, and wherein the apparatus further comprises an inlet line passing through the

pressure vessel wall, the inlet line positioned and arranged so as to be able to introduce

one or more fluids to be processed into the microreactor, and an outlet line passing

through the pressure vessel wall, the outlet line positioned and arrange so as to be able

to remove one or more processed fluids from the microreactor, whereby continuous

processing of reactants at high pressures may be achieved.

2. (Original) The chemical processing apparatus of claim 1 wherein the pressure

vessel comprises an autoclave.

3. (Cancelled)

4. (Previously amended) The chemical processing apparatus of claim 1 wherein the

heat conductive medium comprises SiC.

5-10. (Cancelled)

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11. (Previously amended) The chemical processing apparatus of claim 4 wherein the

SiC comprises SiC in particulate form.

12. (Previously amended) The chemical processing apparatus of claim 11 wherein the

SiC in particulate form has a particle size of between about 5.0 microns to about 1000.0

microns.

13. (Previously amended) The chemical processing apparatus of claim 12 wherein the

SiC in particulate form has a particle size of between about 100.0 microns and 500.0

microns.

14. (Previously amended) The chemical processing apparatus of claim 1 wherein the

microreactor is supported within the inner volume of the pressure vessel by the heat

conductive medium.

15. (Previously amended) The chemical processing apparatus of claim 14 wherein the

microreactor is supported within the inner volume of the pressure vessel by the heat

conductive medium such that temperature control for the microreactor can be achieved

by controlling the temperature of the pressure vessel rather than by directly controlling

the temperature of the microreactor itself.

16. (Previously presented) The chemical processing apparatus of claim 1 wherein said

inlet line is positioned and arranged so as to be capable of introducing into the volume

surrounding the microreactor within the pressure vessel, one or more of the one or more

fluids to be processed.

17. (Previously presented) The chemical processing apparatus of claim 1 wherein said

outlet line is positioned and arranged so as to be capable of withdrawing from the

volume surrounding the microreactor within the pressure vessel, one or more of the one

or more processed fluids.

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